

# Unit 3, Causes of Motion

## Exercise 2, Gravitational Force and Mass

Use the standard problem-solving format in your solutions.

1. What's the difference between mass and weight?
2. Will an object have the same mass on moon as it does on earth? How do you know?
3. Will an object have the same weight on moon as it does on earth? How do you know?
4. An object has a mass of 8.00 kg. What is the gravitational force on the object by the earth? Show your work.
5. An object has a mass of 0.25 kg. What is the gravitational force of on the object by the earth? Show your work.
6. The earth exerts a gravitational force of 500 N on an object. What is the mass of the object in kg? Show your work.

7. The earth exerts a gravitational force of 3.5 N on an object. What is the mass of the object in kg? Show your work.
  
  
  
  
  
  
  
  
  
  
8. The gravitational field strength on the moon is 1.63 N/kg. If a rock on the moon weighs 2000N, what is the mass of the rock? Show your work.
  
  
  
  
  
  
  
  
  
  
9. How much does the same rock (in problem #8) weigh on the earth? Show your work.
  
  
  
  
  
  
  
  
  
  
10. A rock has a mass of 5.00 kg on the moon. What is the mass of the rock on the earth? Show your work.